CAPITAL STRUCTURE AND MARKET POWER

Arvin Ghosh, College of Business, William Paterson University, Wayne, N.J. 07470, 973-720-2221, ghosha@wpunj.edu
Costin Craciunescu, College of Business, William Paterson Univ. Wayne, N.J. 07470, 201-269-5208, craciunescu@wpunj.edu
Sina Brehmer-Songer, College of Business, William Paterson Univ. Wayne, N.J. 07470, 973-720-3975, songerb@wpunj.edu
Diana F. Rojas, College of Business, William Paterson University Wayne, N.J. 07470, 973-720-3975, rojasd@wpunj.edu

ABSTRACT

Our results have shown that there is no systematic relationship between industrial concentration and debt ratios belonging to that group, contrary to some other studies. We have also found no evidence that firms differing in market power have different debt ratios. Obviously, firms with high industry concentration do not respond to factors that affect debt policy differently when they set their debt ratios. When we analyze the regression results, we find that, although the coefficients representing operating profitability have negative signs in four out of six regression equations, they, however, are not in in ascending order, that is, the value of the b-coefficients did not increase with the increase in industrial concentration.

INTRODUCTION

The financial literature is not unanimous regarding the relationship between capital structure and the market power of firms. While Sullivan [4], using the data for the period 1956-1963 found a negative relationship between industry concentration (a proxy for market power) and debt ratios, Melicher, Rush and Winn [2], using data from 1965-1974 found no relationship between concentration and debt ratios. But Lyn and Papaioannou [1], taking more recent census data, had found that firms with high industry concentration, respond to changes in factors that affect debt policy with greater restraint when they set their debt ratios, i.e., negative relationship between industry concentration and debt ratios are taken into account.

Our paper will examine the question anew whether firms differing in market power have different debt ratios. We will expect that firms with specialized and less mobile resources that operate in highly concentrated industries are prone to incur larger bankruptcy costs than firms with low degree of industry concentration. Similarly, firms with higher market power will issue less debt instruments for future investment options, using more retained earnings, as Myers [3] had suggested in his Pecking Order Theory of capital structure. Moreover, when we examine the relationship between financial slack (cash and equivalents) and industry concentration, we will expect that with increased industry concentration, firms have a tendency to build up their financial slacks which can serve as debt capacity in reserve, as Lyn and Papaioannou had found.

The data source for the concentration ratios of the United States manufacturing industries is the 1997 edition of the *Concentration Ratios in Manufacturing*, issued by the U.S. Department of Commerce. Each of the establishments covered in the 1997 Economic Census- Manufacturing, was classified in 1 of 480 industries (473 manufacturing industries and 7 former manufacturing industries) in accordance with the

industry definitions in the 1997 NAICS manuals. This is the first edition of the NAICS Manual and it is a major change from the 1987 SIC Manual that was used previously.

We will classify our sample into six groups of firms in ascending order of their concentration ratios. Within each group we will run simple regressions of the debt ratio on each of the explanatory variables as follows:

	DEBTj = a0 + a1 OPRj			
	DEBTj = b0 + b1 VOPRj			
	BEBTj = c0 + c1 QR			
Where:	DEBT = the ratio of current and long-term debt to total assets;			
	OPR = the ratio of EBIT to total assets;			
	VOPR = standard deviation of OPR;			
	QR = the ratio of market value of equity to its book value;			
	J = a firm identification subscript.			

If bankruptcy costs increase as we move to groups of higher concentration, we will expect to see a diminishing contribution of each independent variable to debt. That is, the regression coefficients a1, b1, and c1 must decline in size (algebraically) as we move from group #1 to group #6 of concentration classes. As for financial slack (cash and its equivalents), we can hypothesize that the factors which affect debt ratios negatively must affect financial slack positively. Thus for each group of firms, we run the simple regression models:

SLACKj =	0 + 1 OPRj;
SLACKj =	0 + 1 VCPRj;
SLACKj =	0 + 1 QRj

Where: SLACK = the ratio of cash and equivalents to current and long-term debt. The prediction now is that the contribution of the independent variables to SLACK increases as we move to groups of firms with higher industry concentration.

EMPIRICAL RESULTS

In Table 1, we have calculated the simple regressions using debt ratio as the dependent variable, and operating profit (OPR), variability of

Concentration Class Intercept OPR Intercept VOPR Intercept QR 1. 8-27% 0.3847 -0.9319 0.4030 -3.8768 0.2638 0.0051 (-1.6989)(-3.3466)(0.3188)2. 28-35% 0.3291 -0.5989 0.3423 -1.7102 0.3346 -0.0162 (-1.5039)(-2.0675)(-2.6005)3. 36-47% 0.2572 0.2763 1.3262 0.2549 0.0039 0.2467 (0.5586)(1.2446)(1.9895)4. 48-52% 0.1277 1.5971 2.3042 -2.2586 0.2156 0.0446 (-2.5319) (2.5800)(1.3459)5. 53-59% -0.2383 1.3618 -0.0201 0.3585 0.2644 0.3477 (0.2998)(-3.4034)(0.6725)6. 60-93% 0.4213 -0.1714 0.4447 -0.6177 0.5442 -0.0507 (-0.4767)(1.0049)(-2.5481)

Table 1Simple Regression of Debt on OPR, VOPR and QR, Respectively

operating profit (VOPR), and Tobin's Q-ratio, as the independent variable for each equation, respectively. Here we find that, although the coefficients representing operating profitability have negative signs in four out of six equations, they are not in ascending order, as expected by the null hypothesis. The same is true for Tobin's Q-ratio, where the signs were negative in three out of six regression equations. In Table 2, we have shown the regression results when the slack

Co	ncentration Class	Intercen	Table 2 t OPR	Intercent	VOPR	Intercent	OR
00		mereep	, orn	mereept	, or it	mereept	X.
1.	8-27%	-0.2572	4.7381	-0.0767	11.0809	0.1715	0.0319
			(2.2364)		(2.0949)		(0.4977)
2.	28-35%	-0.2124	10.1821	-0.2134	23.9993	0.2865	0.1341
			(2.1937)		(2.4346))	(1.5899)
3.	36-47%	2.7308	-10.8073	1.6249	-8.5419	1.5592	-0.0234
			(-0.6105)		(0.2148)		(-0.3072)
4.	48-52%	0.9316	-25.8419	1.6017	14.2416	2.4685	-5.0718
			(2.4269)		(2.4289))	(-0.7862)
5.	53-59%	0.1123	0.0923	0.1585	-0.7605	0.1176	0.0045
			(0.2553)		(0.6804)		(0.9303)
6.	60-93%	0.1605	0.1457	0.1374	0.4364	0.1424	0.0136
			(0.3963)		(0.6822))	(0.5529)

variable (cash and equivalents) was the dependent variable. Here also, both the coefficients of operating profitability and the variability of operating profitability are not consistent with the industrial concentration. For operating profitability, four equations had positive b-coefficients, but only three had significant t-values. The same was true for the variability of operating profits. But for Tobin's Q-ratio, although four regression equations have positive b-coefficients, only one had significant t-value at the 10% level of significance.

CONCLUSION

Our results have shown that there is no systematic relationship between industrial concentration and debt ratios of firms belonging to that group, as had been found by Melicher, Rush and Winn in their study. We have also found no evidence that firms differing in market power have different debt ratios, contrary to the findings by Lyn and Papaioannou. Obviously, firms with high industry concentration do not respond to factors that affect debt policy *differently* when they set their debt ratios.

When we analyze the regression results, we find that only four out of six regression equations have negative signs when the debt ratio was the dependent variable, but only three were statistically significant. Also, they were not in ascending order, as the underlying theory stipulates. The same was true when the slack variable (cash and equivalents) was used as the dependent variable. They were also not in ascending order in their values with the respective concentration class. Thus we have found no consistent relationship between industrial concentration and debt ratios of firms belonging to that group, respectively. Firms with higher degree of concentration do not exercise restraint in their debt ratios than more competitive firms. Our results thus contradict the findings obtained by Lyn and Papaioannou, and leaves room for further research in this vital area of capital structure.

References available from the first author.